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ABSTRACT

A taxonomy of programmatic tasks in an educational evaluation and facilitation coordination system which encompasses tasks appropriate for evaluators, members of an evaluation unit, and members of facilitation and coordination units is proposed. In this comprehensive approach to the evaluation process, the taxonomy classifies and specifies tasks to effect evaluation, facilitation and coordination. It is suggested that such a conceptualization of the evaluation process differs from that of Owens and Stufflebeam, in that the process becomes more rigorous and necessitates the identification and performance of additional tasks. (Author)

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A TAXONOMY of PROGRAMMATIC TASKS

in an EDUCATIONAL EVALUATION FACILITATION and COORDINATION SYSTEM (REVISED)

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Statement of Focus

The proposed taxonomy of programmatic tasks in an educational evaluation and facilitation coordination system encompasses tasks appropriate for evaluators, members of an evaluation unit, and members of facilitation and coordination units. In this comprehensive approach to the evaluation process, the taxonomy classifies and specifies tasks to effect evaluation, facilitation and coordination.

Such a conceptualization of the evaluation process differs from that of Owens and Stufflebeam. In our view, the process becomes more rigorous and necessitates the identification and performance of additional tasks. For example, the development of managerial plans.

CONTENTS

Overview 1
Background: Comparing Two Projects 2
Background: The Current Project 3
The Current Project 4
A Taxonomy of Programmatic Tasks 5
Developing Supportive Climates for Evaluation 7
Focusing an Evaluation: I Selecting Decision Situations 9
Focusing an Evaluation: II Selecting Evaluation Strategies and Developing Evaluation Plans 11
Organizing the Evaluation and Developing Managerial Plans 14
Assessing, Modifying, and Selecting Evaluation and Managerial Plans 16
Selecting, Modifying, or Developing Data-Gathering Techniques 18
Collecting Data 20
Data Processing: I Preparing "Raw" Data 21
Data Processing: II Treating Data (Analysis) 22
Interpreting and Judging Outcomes 24
Reporting Outcomes 27
Information Processing and Dissemination 30
Decision Making: The Utilization of Information 33
Performing Activities and Research Related to Evaluation and to the Development, Diffusion, and Adoption of Evaluation 36
Administering and Coordinating Activities in an Evaluation and Coordination System 38
Providing Facilitation and Coordination Services 40

A TAXONOMY OF PROGRAMMATIC TASKS IN AN EDUCATIONAL EVALUATION FACILITATION AND COORDINATION SYSTEM (REVISED)*

by Alan R. Coller

OVERVIEW

The raison d'etre for the Cooperative Educational Research Laboratory, Incorporated (CERLI) was established as that of inventing new solutions for the operating problems of educational institutions. As a means of accomplishing this purpose, CERLI early concentrated its energies upon the much neglected, but nevertheless important, area of educational "middleman" role development. One of the roles which CERLI initially focused upon was the role of the educational evaluator. CERLI's interest in developing the evaluator role was heightened by (1) the realization that evaluation was to serve an increasingly major role in educational decision-making, (2) the dearth of research in this area, and (3) estimates which predicted a severe shortage of educational evaluators in the near future. Thus, CERLI's focus on the educational evaluator represented an attempt to forestall what appeared to be an impending crisis situation.

In time, CERLI established the Evaluator Development Program--a program designed to define tasks and roles for evaluators. The staff of this program believed that the evaluator role differed depending upon the institutional setting and upon the major question asked of the evaluation. Thus, we find Bates, Buser, Ellis, and Rice[1] indicating that:

> "The overall objective of CERLI's Evaluator Development Program is to enhance effective evaluation processes, procedures, and practices in elementary, secondary, and higher education through the institutionalization of evaluator roles within differentiated settings."

CERLI's Evaluator Task Development Project (ETD Project) represented the first step toward the development of the educational evaluator role. This project was designed specifically to: (1) identify and select evaluative tasks appropriate for performance in differentiated educational settings, (2) identify the skills and competencies needed for the performance of selected evaluative tasks, (3) devise materials and processes for developing these skills and competencies, and (4) apply the materials and processes on a trial basis. Unfortunately, these objectives were not all reached. For a number of reasons not

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*An earlier paper did not contain the overview and background sections. Some minor changes in the body of the paper have also been made.

[1]Bates, D., Buser, R. L., Ellis, J., and Rice, D., "The Evaluator Development Program." Cooperative Educational Research Laboratory, Incorporated, #10, 1967.

uncommon to fledgling organizations, objectives 1 and 2 of the ETD Project were never satisfactorily completed. Instead, another group at CERLI began work on the 3rd and 4th objectives.

During its tenure, the staff at CERLI's ETD Project developed a list of about forty "evaluator tasks" and their associated "skills." CERLI staff[2] also conducted an evaluation of these evaluator tasks and skills by soliciting the reactions of various professionals. In general, the consultants indicated that there was some inconsistency in the degree of specificity with which the evaluator tasks were described and that there was some duplication of tasks. More crucial, however, was the reactions of the consultants to the conceptual framework for the tasks; they suggested that the tasks be organized into a limited number of major task categories according to a theoretical framework or taxonomy. Shortly after the receipt of the consultants reactions the ETD Project was indefinitely discontinued, that is, until this year.

In the meantime, Thomas Owens[3] at Ohio State University wrestled with this very same problem and developed a solution, as his recent article "Suggested Tasks and Roles of Evaluation Specialists in Education" would seem to indicate. A comparison of the two approaches--CERLI's and Owens'--should prove instructive.

BACKGROUND: COMPARING TWO PROJECTS

Owens'[1] approach to the classification issue was quite different from that employed by CERLI's ETD Project staff. Owens pre-selected a classificatory schema; refining and extending Daniel Stufflebeam's[4] set of evaluation process (design) categories. Using a taxonomy as a starting point, Owens proceeded to generate evaluator tasks. This procedure was reversed by CERLI's staff. They first generated evaluator tasks and then attempted to classify those tasks according to the principle of "common elements."

As we indicated earlier, the ETD Project staff assumed (quite correctly) that the specific tasks that an evaluator performs is dependent, in part, upon the specific type of evaluation to be undertaken. They assumed that projects having different evaluation goals (questions) e.g., professional personnel evaluation, educational programs evaluation, etc., would require the educational evaluator to perform essentially different evaluator tasks. The development of a

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[2]Summary of Consultant Reactions to the CERLI Evaluator Development Program with Staff Recommendations for Future Program Development. Cooperative Educational Research Laboratory, Incorporated, #12, 196F.

[3]Owens, T. R., "Suggested Tasks and Roles of Evaluation Specialists in Education." Educational Technology, 1969, IX , p. 4-10.

[4]Stufflebeam, D. L., "Toward a Science of Educational Evalmation," Educational Technology, 1968, VIII, p. 5-12.

questionnaire as against the development of an achievement test, for example. Undue concern for this factor led to the duplication of tasks and detracted from efforts to develop evaluator tasks which adequately reflected the evaluation process for even one of the evaluation goals with which the ETD Project staff were concerned. Owens avoided these problems on three counts. He avoided duplicating tasks by (1) attending to only one type of evaluation project--the evaluation of educational programs, and (2) describing the tasks in general rather than specific terms. He also appears to have included tasks which reflect the evaluation process since his taxonomy is based upon an evaluation process model. Actually, the adequacy by which his tasks reflect the evaluation process depends upon the degree to which his taxonomy adequately portrays the evaluation process. (We will have more to say about this issue later.)

In general, Owens had a broader range of tasks while the ETD Project staff had a broader range of "evaluator" tasks. This must sound strange but can easily be clarified. Owens developed tasks for an "evaluation unit" consisting of an evaluation director, an evaluation coordinator, a surveillance specialist, an instruments specialist, a data-collection specialist, a data processing specialist, and a reporting specialist. CERLI's staff developed tasks for "evaluators in differentiated settings" Thus, CERLI focused on "evaluating" and thereby restricted their range of tasks. On the other hand, Owens' dependency upon Stufflebeam's conceptualization of the evaluation process served to restrict his range of evaluator tasks. The ETD Project staff maintained an eclectic approach to the evaluation process, incorporating in their task descriptions of the evaluation strategies of a number of theoriticians who hold divergent or, at least, non-isomorphic evaluation views.

BACKGROUND: THE CURRENT PROJECT

CERLI's interest in the evaluator development project stemmed from their determination to circumvent a serious manpower shortage which Clark and Hopkins[5] had predicted would soon occur, that is, if no remedial steps were taken. The shortage never fully materialized despite legislated requirements for recipients of government funds to evaluate. Clear needs for evaluator services were seldom translated into demands and school systems used available personnel, trained or not, to undertake evaluation projects. Indeed, Hopkins[6] has recently indicated that updated versions of the manpower report may not even contain a category for the evaluator. After a careful examination of the issues it was suggested that CERLI should abandon, at least temporarily, their attempts to develop the evaluator role, and concentrate instead on developing programs to train school personnel to perform certain evaluative tasks. However, CERLI was also informed that it would not be enough to train school personnel to undertake evaluation projects, their activities must be supported, coordinated, and

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[5]Clark, D. L. and Hopkins, J., "Roles for Researchers, Developers, and Disseminators." CRP Project X-002, 1966.

[6]Telephone conversation with John Hopkins, March 1969.

facilitated by other personnel. Toward this end a possible model for the facilitation and coordination of educational evaluation was provided.

Briefly, it was suggested that school personnel should be trained over a period of time to undertake a variety of evaluation projects and that their efforts should be facilitated and coordinated by trained evaluators and specialists in facilitation and coordination roles. Specifically, it was recommended that states should financially support several teams of evaluation and area specialists whose responsibility it would be to research certain evaluation-related areas, collect, develop, and disseminate evaluation materials, train school and evaluator-type personnel, and perform site-visits. With some support by the state, districts should combine their resources to hire a team of evaluation, facilitation, and coordination specialists who would have research, development, diffusion, adoption, training, facilitation, coordination, and evaluative roles. Two roles should be developed at the district level: the Evaluation Facilitator and the Evaluation Coordinator. The Facilitator would function to persuade school personnel to undertake evaluation, to facilitate their activities, to support their activities, and to perform certain evaluative tasks. The major goal of the Facilitator would be to increase meaningfully and permanently the quality and usage of evaluation. The Evaluation Coordinator assists the Facilitator in several functions and, additionally, functions to coordinate evaluation activities within the individual school, within the district, and between districts. The major goal of the Evaluation Coordinator would be to eliminate or reduce needless duplication of efforts and to increase the <u>generalizability</u> of findings by standardizing evaluation objectives, plans, and techniques over cooperating schools and districts. At the school level, it was recommended that educators should be selected to assume the role of an Evaluation Intermediary, and act as laison between the local school personnel and the Facilitator and the Coordinator. Finally, it was suggested that parents trained as evaluator aides should be recruited to assist educators in their evaluation efforts.

THE CURRENT PROJECT

CERLI's early attempt to develop evaluator tasks and Owens' later more sophisticated approach both represent significant contributions to this area. Our attempt at developing a classificatory schema for tasks in a "hypothetical" evaluation facilitation and coordination system is but a modest step forward in comparison to their ground-breaking efforts. Indeed, we intend only to impose a new frame of reference upon previously initiated work and add to an already impressive and imposing list of tasks. We suppose that even more tasks could be added to our lists and fully expect that others will do so. Indeed, tasks related to systems analysis in education--planning-programming-budgeting systems, for example --have not yet been included, but should be. As far as we are concerned the current project should not be looked upon as a final version. The tasks remain to be empirically tested against the real world.

The impetus to engage in a task development project derives mainly from efforts to provide a more comprehensive base for efforts to develop roles in evaluation-related areas of education. Another reason for this project is related

to our attempts to develop an evaluation facilitation and coordination system. Such a system cannot adequately be described until tasks have been defined. During the process of describing the system we will be defining and refining the roles of the participants of the system. In turn, the role definitions will act as a check against the lists of tasks. We could, for example, have unassigned tasks, or we could find that we inadvertantly forgot to include certain tasks.

The project differs in several ways from that of its predecessors'. Some of the differences seem irrelevant--style differences, for example, are unimportant. Other differences, the focus, for instance, is an important aspect to discuss. It is our intention to define tasks which would be appropriate for the participants in a system which includes evaluation, but also includes the facilitation and coordination of evaluation efforts. Our focus affects the scope of the project. This project includes tasks appropriate for evaluators, members of an evaluation unit, and members of facilitation and coordination units. Thus, the scope of this project is much broader than earlier attempts.

Stufflebeam's conceptualization of the evaluation process, with some refinement, serves as the basis for Owens' taxonomy. Differences between Owens' taxonomy and ours result from four sources. As already indicated, we are concerned with a comprehensive evaluation, facilitation and coordination system--Owens was concerned only with an evaluation unit. Secondly, we have attempted to be more explicit. Thirdly, our conceptualization of the evaluation process differs from that of Owens and Stufflebeam. We have made an attempt to envision a more rigorous process and have, therefore, included additional categories--the development of managerial plans, for example. And, fourthly, our conception of the evaluators' responsibilities seems to differ from that of Owens. We envision the evaluator as being responsible for more than description--he must also make judgments.

A TAXONOMY OF PROGRAMMATIC TASKS

A proposed taxonomy (classification scheme) for tasks in an hypothetical educational evaluation facilitation and coordination system consists of the sixteen programmatic tasks as found in Table I.

TABLE I

A Taxonomy of Programmatic Tasks in an Educational Evaluation Facilitation and Coordination System

1. Developing supportive climates for evaluation

2. Focusing an evaluation: I Selecting decision situations
3. Focusing an Evaluation: II Selecting evaluation strategies and developing evaluation plans

4. Organizing the evaluation and developing managerial plans
5. Assessing, modifying and selecting evaluation and managerial plans

6. Selecting, modifying or developing data-gathering techniques
7. Collecting data
8. Data processing: I Preparing "raw" data
9. Data processing: II Treating data (analysis)

10. Interpreting and judging outcomes
11. Reporting outcomes

12. Information processing and dissemination
13. Decision making: the utilization of information

14. Performing activities and research related to evaluation and to the development, diffusion and adoption of evaluation

15. Administering and coordinating activities in an evaluation and coordination system.

16. Providing facilitation and coordination services

1. DEVELOPING SUPPORTIVE CLIMATES FOR EVALUATION

There are two major conceptions of evaluation: (1) the traditional evaluation approach which focuses upon marking, grading, crediting, and the attainment of behavioral objectives through specific transactions; and (2) the more modern or current evaluation approach which is intent on providing the decision-maker with the kinds of information he requires in order that he may arrive at a "rational" decision about the "real" world. In this neoteric evaluation approach, "Anything goes...any reasonable means to an end."[7]

Despite this amazing trend in evaluation theory, evaluation specialists and many of the members of the educational community (EM) have not appreciably improved their working relationships that traditionally have jeopardized whatever mutual efforts have been undertaken. Since most educators are required to grade their students, they will evaluate or measure student outcomes. In general, however, educators resist or reject the use of evaluation for other purposes. They--or so it seems--have no desire to initiate formal evaluation efforts, traditional or otherwise, or to take part in such efforts.

Many evaluators have arbitrarily assumed that the educators' professional insecurity generates this uncooperative attitude. However, some evaluators' insensate approach could catalyze negative reactions. In actuality, the educators' disillusionment with traditional evaluation practices may well account for such negativism and hostility.

For example, Stake[8] has suggested that "Today's educator may rely little on formal evaluation because its answers have seldom been answers to questions he is asking." (p. 523) Egon Guba[9] concurs: "The traditional methods of evaluation have failed educators in their attempts to assess the impact of innovations in operating systems." (p. 29)

One cannot easily avoid the implications that Stake and Guba draw: Evaluators and evaluation efforts are resisted by the educational community because the "pay-off" they have received to date has been totally inadequate. Indeed, Guba[10] argues that traditional evaluation efforts have hurt more than have helped the educator.

Efforts to relieve this impossible situation by creating evaluation models which are more acceptable to educators have met, so far, with only partial

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[7] Which is not to be confused with sloppiness. The current approach is to use both objective and subjective measures, but to insure that the subjective data has some objective base.

[8] Stake, R. E., "The Countenance of Educational Evaluation." Teachers College Record, 1967, 68, p. 523-540.

[9] Guba, E. G., "The Failure of Educational Evaluation." Educational Technology, 1969, IX, p. 29-38.

[10] Ibid.

success. Even reasonable expectations that recently-enacted legislation would rekindle the educators' latent interest in evaluation have been extinguished--predicted demand situations simply have not materialized. It would seem that most educators either do not know about the dramatic changes which have occurred in evaluation strategies or do not fully comprehend the meaning of such changes.

This communications problem must be solved, and participants in evaluation activities have the obligation to inform the educational community of the many advances in evaluation strategies and techniques. Once the educational community realizes the need for evaluation, the transition to a <u>demand</u> situation (though still great) is no longer the olympian task it now appears to be.

Performance of the following <u>tasks</u> would induce a supportive climate for evaluation:

<u>1.1</u> Developing alternative strategies based upon particular characteristics of select members or segments of the educational milieu in order to modify reactions towards evaluation

<u>1.2</u> Assessing the existing attitudes of selected members of the educational milieu toward evaluation*#[11]

<u>1.3</u> Becoming thoroughly aware of the individual's or group's unique characteristics#

<u>1.4</u> Establishing trust and rapport with all members of the educational milieu, but particularly with participants of an evaluation effort#*

<u>1.5</u> Identifying available neoteric evaluation strategies and techniques

<u>1.6</u> Making select members of the educational milieu aware of the discrepancies between the observed and the intended#

<u>1.7</u> Demonstrating, in other ways, the efficacy of evaluation

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[11] Henceforth, this symbol (*) will be used to represent a <u>correspondence of some degree</u> between task descriptions within this paper and tasks as described by Owens. (See Owens, T.R., "Suggested Tasks and Roles of Evaluation Specialists in Education." <u>Educational Technology</u>, 1968, VIII, p. 4-10).

Henceforth, this symbol (#) will be used to represent a <u>correspondence of some degree</u> between task descriptions within this paper and tasks as described by Bates, et al (See Bates, D., Buser, R.L., Ellis, J., and Rice, D., "The Evaluator Development Program." Cooperative Educational Research Laboratory, Inc., #10, 1967).

1.8 Identifying and reducing any inhibitions toward evaluation#*

1.9 Instilling within the educational community an awareness of the need for evaluation#

1.10 Instilling within the educational community a demand for evaluation

1.11 Reinforcing positive attitudes toward evaluation

1.12 Stating clearly the purposes of an evaluation and the role of the evaluator*

1.13 Indicating clearly, when appropriate, the types of information that will result from an evaluation and to whom it will be made available

1.14 Establishing clearly operational procedures and mutual rules of "etiquette" with participants of an evaluation effort

1.15 Maintaining open communication channels among the participants of an evaluation effort

1.16 Thanking the participants of an evaluation effort for their cooperation

1.17 Crediting, when appropriate, selected participants for their cooperation and aid in bringing an evaluation effort to a conclusion

1.18 Providing, when appropriate, feedback related to the outcomes of an evaluation effort to participants of the evaluation

1.19 Inviting and encouraging select members of the educational milieu to participate actively in evaluation efforts*

1.20 Supporting the efforts of persons initiating and/or engaging in evaluation efforts

1.21 Consulting with and supporting the efforts of professionals and para-professionals who are attempting to develop a supportive climate for evaluation.

2. FOCUSING AN EVALUATION: I SELECTING DECISION SITUATIONS

As a rule, educators will not themselves seek to initiate formal evaluation efforts unless (1) they are fully cognizant of the potential or current existence of a "problem" that must or should be resolved; and (2) they are convinced that there is a need to systematically collect additional data and/or

information bearing on the problem. They will, of course, continue to apply grades and initiate evaluation efforts as a response to "institutional press" described by Taylor[12] as "societal and professional pressures," i.e., charges from the school board or legislation requiring evaluation.

With the possible exception of an evaluation specifically designed to reveal the existence of unrealized problems, evaluation planning cannot, under normal circumstances, meaningfully begin unless a need--a problem--has been noted and until educators have identified, evaluated, and selected specific "decision situations" as the foci of the evaluation effort. Smith[13] has defined decision situations as "Any situation in which a judgment must be made about a course of action." The functioning textbook committee has entered into a decision situation, for example. Having been alerted by a colleague of the need to replace worn texts, they must now decide to reorder the same or to order a newer text. How they will arrive at a decision should concern us all. Will they rely solely upon propaganda, authority, tradition, or intuition? Or, will they systematically collect data and/or information about the two texts? The latter course of action certainly would be preferable.

Not every educator is sufficiently experienced or skilled to recognize the existence of a problem that requires the decision-maker to develop a solution. Others, dreading the decision-making process itself, choose to ignore untoward indicators. Still others may respond inflexibly to a problem that is only partially understood. Thus, in addition to assisting in the identification, evaluation, and selection of decision situations, evaluation specialists also must assume responsibility for training educators to be alert to educational needs--to become more sensitive to "decision stimuli," i.e., those stimuli (worn textbooks) which direct the attention of the decision-maker, as well as significant others, to a decision situation.

Tasks in this category include:

2.1 Training select members of the educational milieu to become sensitive to decision stimuli (including "institutional presses")

2.2 Responding to decision stimuli (including "institutional presses")

2.3 Reinforcing those individuals sensitive to decision stimuli

2.4 Identifying decision situations of interest and importance to select members of the educational milieu

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[12]Taylor, P.A., "A Theoretical Evaluation Model." Educational and Psychological Measurement, 1967, 27, p. 305-321.

[13]Smith, G.R., "An Analysis of Research on Decision Situations and Processes." Paper presented at the Meeting of the American Educational Research Association, February 1967, p. 3.

2.5 Determining the desirability of collecting evaluative information for each of the identified decision situations

2.6 Identifying the major level(s) of decision-making and of decision-makers to be served*

2.7 Identifying the decision-making process as it operates in a given setting#

2.8 Determining meaningfulness and feasibility of collecting evaluative information for each of the identified decision situations

2.9 Establishing priorities for the collection of evaluative information

2.10 Selecting tentative, desirable, meaningful, and feasible decision situations for evaluation

3. FOCUSING AN EVALUATION: II SELECTING EVALUATION STRATEGIES AND DEVELOPING EVALUATION PLANS

Despite their obvious kinship, there is no denying that educational evaluation significantly differs from its pedagogically-oriented counterpart--educational research. Each tends to emphasize divergent educational concerns, for example. It is the intention of all educational evaluation to provide decision-makers (either present or future) with "practical" information related to the "worth" of educational experiences, outcomes, and artifacts. Most of the time the evaluation will be concerned with describing or judging "what" it is that is happening. At other times, the evaluation will be concerned with "why" a thing happens.

Recently, Stake[14] suggested that evaluators "Have a fundamental choice: to be scientific, to generalize, to evaluate to find out why; or to be descriptive, to be delimited, and to evaluate to find out what." (p. 41)

In contrast, one finds that it is not always the intention of educational research to provide outcomes which have practical educational value; some educational research (as it should be) is purely "theoretical." Furthermore, educational research is only mildly interested in describing "what" is happening; its major concern is to discover and confirm the causes and effects--the "whys"--of educational experiences and outcomes. Of the two, evaluation is the more flexible and readily adapts, in its ascientific form, to the natural chaos of ongoing action programs. Basically a "laboratory" science, educational research is more restricted than evaluation and requires highly controlled conditions.

[14]Stake, R.E., "Generalizability of Program Evaluation: The Need for Limits," Educational Product Report, 1969, 2, p. 39-41.

What kind of evaluation strategy should the evaluator utilize? Should he employ what Campbell and Stanley[15] have called "quasi-experimental" research designs, or should he use the more traditional "experimental" design? As a matter of fact, the evaluator is in a position to choose "pre-experimental" designs. The choice, according to Stake[16], "Depends on how much and in what directions the findings are expected to generalize, to be relevant to programs other than the one observed."

Another aspect of evaluation strategy concerns the categories of information which should be gathered as part of the evaluation. Evaluation designs developed by Stake[17] and by Stufflebeam[18] provide us with some answers to this problem.

After an evaluation strategy has been selected, an evaluation plan must be developed. One must distinguish between evaluation plans and managerial plans. Evaluation plans are concerned with both general design issues and the detailed accounting of the proposed content--the "what"--of the evaluation. Managerial plans also are concerned with specifics--the detailed "how" of the evaluation.

Tasks associated with this category are:

3.1 Establishing criteria for decision-making regarding expected outcomes#

3.2 Projecting the decision situations to be served in terms of their locus, focus, criticality, timing, and composition of alternatives*

3.3 Becoming knowledgable about relevant aspects of settings, conditions, and/or contexts within which the evaluation will occur#

3.4 Projecting the decision situations to be served in terms of political, social, institutional, and situational constraints

3.5 Defining policies and limits within which the evaluation must operate

3.6 Making explicit and clarifying project assumptions*

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[15]Campbell, D.T. and Stanley, J.C., "Experimental and Quasi-experimental Designs for Research on Teaching." In Gage, N.L. (Ed), Handbook of Research on Teaching, Chicago: Rand McNally & Co., 1963.

[16]Stake, R.E., loc. cit.

[17]Stake, R.E., "The Countenance of Educational Evaluation." p. 523-540.

[18]Stufflebeam, D.L., "Toward a Science of Educational Evaluation," Educational Technology, 1968, VIII, p. 5-12.

3.7 Requesting pertinent information from surveillance specialists and retrieval centers

3.8 Reviewing research literature concerning similar projects in order to: (1) verify assumptions, (2) uncover sources of possible incidental gains or unwanted side effects, and (3) make as uniform as possible the use of tests and testing procedures*#

3.9 Visiting pertinent persons and places to acquire updated information

3.10 Developing the rationale and objectives for the decisions situations

3.11 Identifying or formulating the basic question and/or hypothesis of the evaluation#

3.12 Establishing premises which will guide the evaluation*

3.13 Determining if the evaluation goals are formative, summative, or both

3.14 Determining the level of generalization for the evaluation

3.15 Identifying, when appropriate, the pre-experimental, experimental, or quasi-experimental research designs to be used in the evaluation#

3.16 Identifying available evaluation strategies

3.17 Selecting an appropriate evaluation strategy#

3.18 Utilizing, when necessary, the services of evaluation specialists to select evaluation strategies and develop evaluation plans

3.19 Developing, if necessary, evaluation strategies#

3.20 Identifying segments of the educational community to be affected by the intended transactions and outcomes

3.21 Detailing, when appropriate, intended antecedents, transactions, and outcomes#

3.22 Re-structuring, when necessary, intentions (objectives) into observable (measurable or describable) outcomes*

3.23 Listing, if appropriate, the potential existence of contingencies between antecedents, transactions, and outcomes

3.24 Listing, if appropriate, the potential congruence between intents and observations

3.25 Making explicit and clarifying standards for use in the judgment of alternatives*

3.26 Identifying and clarifying judgments required of the evaluator

3.27 Identifying segments of the educational milieu from which judgments will be collected

3.28 Estimating, when appropriate, which data-gathering techniques will be utilized in the collection of observables

3.29 Identifying the sample#

3.30 Relating the project or program to other efforts or experiences of others who have coped with similar or related areas, and showing how the project utilizes, builds upon, extends, revises, or adapts to existing knowledge#

3.31 Coordinating efforts to develop evaluation plans

3.32 Smoothing the efforts of others to develop evaluation plans

4. ORGANIZING THE EVALUATION AND DEVELOPING MANAGERIAL PLANS

The recent incursion of network-based managerial systems into the social sciences (see the work of Desmond Cook,[19] for example) now makes it meaningful to create specialized plans--to distinguish between evaluation and managerial plans. Evaluation plans are designed, partially, to focus the evaluation--to sharply define what will be done to answer what basic questions. In contrast, managerial plans are concerned mainly with the systematic organization of evaluation components--a detailed description concerned with (1) how the evaluation will take place, step by step, and (2) what resources (money, manpower, facilities, machines) will be required over what period of time. It is a complex step whereby a multitude of divergent components are arranged into a coordinated program or project. Also, during this stage it is often appropriate, at the very least, to develop plans for the (1) selection, modification, or development of data-gathering techniques; (2) sampling of populations; (3) collecting of data (including procedures and data formats); (4) preparation of data; (5) treatment of data; (6) interpretation and judgment of outcomes; (7) reporting of outcomes; (8) storage and dissemination of reports; and (9) utilization of information by decision-makers. Of course, not every evaluation effort will be concerned with developing every one of these nine plans, but even that must be determined.

Management plans or systems based on the concepts of network planning and critical path analysis are known by a wide variety of abbreviated names. For

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[19] Cook, D., "Program Evaluation and Review Technique: Applications in Education." OE-12024, Cooperative Research, Monograph No. 17, 1968.

example, there are PERT (Program Evaluation and Review Technique) and CPM (Critical Path Method) procedures. Such systems can allow for the planning, scheduling, and controlling of complex interrelated evaluation efforts and of the resources (time, money, manpower, facilities, machines) required to execute those activities. Archibald and Villoria[20] have written an excellent technical book on management systems.

Tasks appropriate for this function are:

4.1 Reviewing and becoming familiar with the objectives of the evaluation effort

4.2 Identifying those program and/or project components which must be completed in order to achieve the evaluation objectives

4.3 Reviewing and becoming familiar with issues of criticality and timing*

4.4 Identifying "milestones" and developing a planning structure for the program or project.

4.5 Developing planning structures for individual projects or components

4.6 Developing plans for selecting or developing data-gathering techniques

4.7 Developing sampling plans

4.8 Developing plans for coding data

4.9 Developing plans for collecting data#

4.10 Developing plans for preparing raw data#

4.11 Developing plans for treating data

4.12 Developing plans for interpreting and judging outcomes

4.13 Developing plans for reporting data

4.14 Developing plans for storing and disseminating information

4.15 Developing plans for information utilization

4.16 Determining the dependency relationship existing among the identified project components

[20] Archibald, R. D. and Villoria, R. L., Network-Based Management Systems (PERT/CPM), New York: John Wiley & Sons, 1967.

4.17 Arranging the components of the evaluation in a network according to a plan

4.18 Determing how long it will take to complete the program plan

4.19 Determining the amount and type of resources required to complete the plan

4.20 Modifying the plans according to known restraints

4.21 Determining local resources available for the evaluation#

4.22 Defining the manpower and material needs for the evaluation*#

4.23 Constructing an evaluation budget for the project*#

4.24 Coordinating efforts to develop managerial plans

4.25 Smoothing efforts to develop managerial plans

5. ASSESSING, MODIFYING, AND SELECTING EVALUATION AND MANAGERIAL PLANS

As evaluation and managerial plans are being developed, they should be systematically assessed and a final assessment should be made before they are submitted for funding. Plans assessments should include stylistic criteria, i.e., general communicability. They also should include content criteria, i.e., legality and practicality. In a relatively recent article, Caldwell[21] described a plans assessment framework and suggested criteria by which plans may be assessed.

Tasks which should be included with this factor are:

5.1 Reviewing evaluation and managerial plans for communication value, i.e., are the plans clear and seductive

5.2 Determining if the scope of the evaluation has been stated explicitly

5.3 Determining when necessary, if the format of the proposed plans is appropriate for the receiving agency#

5.4 Learning the project rationale, objectives, and operational procedures*

5.5 Determining the audiences, the decision-makers to be served, and the nature of the implementing agency*

5.6 Using effectively subject area or technical specialists whenever necessary to review the evaluation and managerial plans#

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[21]Caldwell, M. S., "An Approach to the Assessment of Educational Planning." Educational Technology, 1968, VIII, p. 5-12.

5.7 Determining the relevance of the proposed evaluation plan to the identified decision situations@[22]

5.8 Determining the relevance of the proposed managerial plan to the proposed evaluation plan

5.9 Determining the legal status of the proposed evaluation and managerial plans relative to the context within which they are to be implemented@

5.10 Determining the congruence of the evaluation and managerial plans with the value systems of the context within which they are to be implemented@

5.11 Determining if the evaluation plan is within the purview of the agency charged with the implementation@

5.12 Determining the compatibility of the evaluation and managerial plans with the value system(s), i.e., purposes and goals of the implementing agency@

5.13 Determining the impact of the evaluation and managerial plans on other components (sub-systems) of the system and on the weights and interrelationships of these system elements@

5.14 Determining the practicality of the evaluation and managerial plans in terms of achieving its stated purposes (end-products)@

5.15 Determining the relative desirability of the evaluation and managerial plans (in comparison with other plans) in terms of the ratio of necessary inputs (costs) to expected outputs (effectiveness)@

5.16 Consulting with clients in order to review and/or modify evaluation and managerial plans

5.17 Modifying the evaluation and managerial plans in terms of the outcomes of the assessment

5.18 Coordinating assessment efforts

5.19 Smoothing assessment efforts

5.20 Submitting the proposed plans for approval and funding

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[22]Henceforth, this symbol (@) will be used to represent a correspondence of some degrees between task descriptions within this paper and tasks as described by Caldwell (Ibid.)

6. SELECTING, MODIFYING, OR DEVELOPING DATA-GATHERING TECHNIQUES

Both the educational evaluator and the educational researcher share an interest in so-called "objective" information. In addition to "objective information," however, the evaluator is equally as intrigued by "subjective information." As Stake[23] has explained, "An evaluation of a school program should portray the merit and fault perceived by well-identified groups, systematically gathered and processed. Thus, judgment data and descriptive data are both essential to the evaluation of educational programs." Thus, the evaluators' interest in all forms of data (be they "soft" or "hard") portrays his commitment to describe fully the "countenance" of an educational experience.

As one would predict, the evaluator's sweeping data interests are amply reflected in the eclectic assortment of data-gathering techniques that he habitually employs in his studies. These techniques range from standardized psychometric tests through unsystematized personal observances. For this reason, we have inserted the term "techniques" for the term "instruments." Since the evaluator is free to use direct personal observations as a means of gathering data, he can subjectively describe persons, places, things, and processes which could not otherwise be so easily described. He need not (though often does) rely upon replicable procedures. Often, the acceptance of the evaluator's description is based upon conviction that the evaluator is astute enough to understand the environment.

To better describe outcomes, the evaluator recently has become interested in "criterion-referenced" tests. A relevant bibliography is presented by Baker[24] in a recent view.

Tasks considered important for selecting, modifying, or developing data-gathering techniques include:

- 6.1 Reviewing and becoming familiar with the intents of an evaluation study
- 6.2 Stating the purposes for which data-gathering techniques are to be used*
- 6.3 Stating explicitly the objectives for which data-gathering techniques are to be used#
- 6.4 Utilizing, when necessary, the services of test and measurement specialists
- 6.5 Reviewing resource materials related to similar projects to uncover suitable data-gathering techniques#

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[23] Stake, R. E., "The Countenance of Educational Evaluation," p. 527

[24] Baker, R. L., "Curriculum Evaluation," Review of Educational Research, 1969, 39, p. 339-354

6.6 Securing the maintaining copies of data-gathering techniques#

6.7 Utilizing, when necessary, the services of surveillance specialists

6.8 Developing criteria for selecting the most suitable available data-gathering techniques*#

6.9 Identifying pertinent techniques for which evidence indicates effectiveness#

6.10 Selecting suitable data-gathering techniques

6.11 Modifying, field-testing, and revising identified data-gathering techniques#

6.12 Developing specifications for constructing data-gathering techniques if no existing data-gathering techniques are appropriate*

6.13 Developing, pilot testing, and revising new data-gathering techniques*#

6.14 Collecting, when appropriate, reliability and validity information#

6.15 Collecting, when necessary, normative information for use as standards

6.16 Preparing administrative and scoring manuals for the newly modified or developed data-gathering techniques

6.17 Training personnel in the administration of various data-gathering techniques

6.18 Consulting with clients regarding available data-gathering techniques

6.19 Advising clients regarding the development, validation, and norming of various data-gathering techniques

6.20 Aiding select members of the educational milieu in the application of sound tests and measurement policies, programs, and practices#

6.21 Persuading others to cooperate in the development, validation, and norming of specific data-gathering techniques

6.22 Obtaining resources and resource personnel to facilitate the development, validation, and norming of specific data-gathering techniques

6.23 Coordinating efforts to select, develop, modify, validate, and/or norm data-gathering techniques

6.24 Smoothing the efforts of others to select, modify, develop, validate, or norm data-gathering techniques

6.25 Researching new data-gathering techniques

7. COLLECTING DATA

The implementation of evaluation plans often begins with the collection of data. This is frequently true even if a "pre-test" is not administered, for the evaluator is concerned with describing transactions as they take place. As a method, data collection is not independent of the techniques used to gather the data. The administration of some data-gathering techniques requires the examiner to be highly skilled and experienced. Indeed, the administration of some techniques requires great sensitivity--an "artistic" talent. But there are many other techniques which do not require such skill. For example, many techniques are daily administered by educators who are less well-trained than professional examiners. Because of this, one can anticipate that parents (trained as paraprofessional evaluation aides--a role not unlike the teacher's aide) might assist the educator during an evaluation by administering data-gathering techniques.

Tasks related to the collection of data are:

7.1 Specifying information needs clearly and concisely#

7.2 Identifying information sources (populations and individuals) for the collection of data*

7.3 Identifying information environments for collecting data

7.4 Specifying methods to be used in collecting data*

7.5 Specifying sampling procedures*#

7.6 Specifying the schedule for data collection*

7.7 Reviewing the sampling plan and schedule with relevant others for appropriateness and congruence with other ongoing programs

7.8 Utilizing, when necessary, the services of data collection specialists

7.9 Preparing the sample population and relevant others for data collection

7.10 Field-testing data collection methods

7.11 Training personnel to collect and record data*

7.12 Informing personnel of the rules of "etiquette" for collecting data

7.13 Administering evaluative data-gathering techniques and recording the data*

7.14 Reviewing and modifying, when necessary, data collecting plans and methods

7.15 Obtaining resources and resource personnel for data collection efforts

7.16 Persuading others to cooperate in the collections and recording of data

7.17 Coordinating efforts to collect data

7.18 Smoothing the efforts of others to collect and record data

7.19 Researching data collection techniques

8. DATA PROCESSING: I PREPARING "RAW" DATA

In examining the evaluation process, three major types of processing activities--two categories of "data" processing and one category of "information" processing can be identified. By data processing we shall mean, (1) the systematic transformation and organization (the preparation) of "raw" data into forms suitable for the application of analytical operations and (2) the systematic treatment of transformed and organized data during the actual analytical process. This latter set of activities includes the use of computers and computer-related equipment. Information processing refers to those activities related to the preparation of already prepared, treated (analyzed), interpreted, judged, and reported data and outcomes for purposes of dissemination.

Under ordinary evaluation conditions one seldom finds freshly collected data, that is, raw data or unprocessed responses, to be in a form suitable enough to be analyzed without first being specially prepared. The raw data processing function mainly entails (1) the conversion of unprocessed responses into scores or categories; (2) the transformation of scored responses into data storage cards or tabulation sheets; (3) a systematic organizing and re-organizing of coded responses into forms consistent with intended analytical operations; and (4) the storage and retrieval of data. Tasks adjunctive to the above include the operation of scoring machinery and computer-related equipment.

Tasks which would fall within the domain of raw data processing include:

8.1 Providing specifications for the scoring and/or classification of data

8.2 Becoming familiar with the data, the intended analytic process, and available computer programs

8.3 Providing formats for coding data which are compatible with available computer programs or analytic procedures*

8.4 Training personnel in response interpretation

8.5 Training personnel to operate mechanical scoring units

8.6 Scoring and/or classifying responses obtained from the administration of data-gathering techniques*

8.7 Utilizing, when necessary, the services of professional scoring services

8.8 Transcribing memorial or taped data when necessary

8.9 Training personnel to operate machines related to the preparation of computer data cards

8.10 Transferring raw data onto computer cards, tabulation sheets, or other data storage systems

8.11 Utilizing, when necessary, the services of data processing assistants

8.12 Providing for data storage, management and retrieval

8.13 Utilizing, when necessary, the services of data processing specialists, and test and measurement specialists

8.14 Informing relevant members of the educational milieu regarding the types of raw data available for heuristic purposes#

8.15 Coordinating data processing activities*

8.16 Disseminating raw data upon the request of appropriate officials

8.17 Consulting with clients regarding the preparation of raw data

8.18 Obtaining resources and resource personnel for preparing raw data

8.19 Smoothing the efforts of others to prepare raw data

9. DATA PROCESSING: II TREATING DATA (ANALYSIS)

Fred Kerlinger[25] defines "analysis" as "The ordering, the breaking down of data into constituent parts in order to obtain answers to...[evaluation]

[25]Kerlinger, F. N., Foundations of Behavioral Research, New York: Holt, Rinehart and Winston, Inc., 1965, p. 603.

questions." He explains that, "The analysis of...[evaluation] data, however does not in and of itself provide the answers to...[evaluation] questions. Interpretation of the data is still necessary."[26] Thus, data analysis is a process during which prepared data are systematically treated for the purposes of description, interpretation, and the rendering of judgments.

During this process the evaluator or the statistical specialist or the data programming specialist systematically manipulates prepared data according to operations dictated by statistical formulae and the "language" of the computer. Indeed, in the last decade computer science has progressed so rapidly that the accomplished statistical specialist is one who has become well acquainted with computer programming--a marriage seemingly enhancing both disciplines.

Tasks which can be associated with this function are:

9.1 Reviewing the objectives of the evaluation

9.2 Determining the level of sophistication required by decision-makers

9.3 Reviewing the evaluation design actually employed

9.4 Reviewing the sampling procedures actually employed

9.5 Determining the nature of the data collected

9.6 Determining desired levels of statistical precision

9.7 Reviewing the research literature for new statistical procedures

9.8 Utilizing, when necessary, the services of statistical specialists

9.9 Becoming familiar with available computer programs

9.10 Selecting the analytical procedures*

9.11 Using existing computer programs#

9.12 Writing new computer programs when necessary*

9.13 Utilizing, when necessary, the services of program writers

9.14 Designating a means for performing the anlysis*

9.15 Developing a library of cookbook-like statistical forms and procedures

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[26] Ibid.

9.16 Performing the statistical computations*

9.17 Treating data to test hypothesis determining relationships and/or to answer basic questions

9.18 Obtaining resources and resource personnel to facilitate the analytical process

9.19 Utilizing, when necessary, the services of computer and computer-related equipment operators

9.20 Coordinating efforts to treat the data

9.21 Smoothing the efforts of others to treat data

9.22 Consulting with clients regarding statistical procedures

9.23 Researching new analytical procedures

9.24 Producing computational documentation when appropriate#

9.25 Advising clients regarding available computer programs

9.26 Consulting with clients regarding computer programming and operations

9.27 Maintaining a library of computer programs and their descriptions

9.28 Determining the types of computer programs which will be demanded in the future

9.29 Disseminating information pertaining to the acquisition and/or modification of computer programs

10. INTERPRETING AND JUDGING OUTCOMES

The evaluator who "interprets" the outcomes of an evaluation explores them for their meaning and implications. Interpretation as a process takes the treated data and makes inferences regarding various aspects of the evaluation. The evaluator might, for example, make inferences about the "congruence" as found to exist between intentions and observations. According to Stake,[27] "The data... are congruent if what was intended actually happens. To be fully congruent the intended antecedents, transactions, and outcomes would have to come to pass. (This seldom happens--and often should not.)"

[27]Stake, R. E., loc. cit.

The evaluator also may attempt to draw conclusions about "contingencies" existing among antcedents, transactions, and outcomes. Stake distinguishes between "logical contingencies" and "empirical contingencies":

> "Whenever intents are evaluated the contingency criterion is one of logic. To test the logic of an educational contingency the evaluators rely on previous experience, perhaps, or research experience, with similar observables. No immediate observation of these variables, however, is necessary to test the strength of the contingencies among intents.
>
> "Evaluation of observation contingencies depends on empirical evidence. To say, 'this arithmetic class progressed rapidly because the teacher was somewhat, but not too sophisticated in mathematics' demands empirical data, either from within the evaluation or from the research literature."[28]

Interpretation is but one concern of the evaluator; he must also indicate the perceived merits and shortcomings of whatever it was that he evaluated. Stake and Denny[29] claim that:

> "Evaluation is not a search for cause and effect (as is research), an inventory of present status, or a prediction of future success. It is something of all of these but only as they contribute to understanding substance, function, and worth."

Scriven[30] also has a similar concept of evaluation:

> "Evaluation is itself a methodological activity which is essentially similar whether we are trying to evaluate coffee machines or teaching machines, plans for a house or plans for a curriculum. The activity consists simply in the gathering and combining of performance data with a weighted set of goal scales to yield either comparative or numerical ratings, and in the justification of (a) the data - gathering instruments, (b) the weightings, and (c) the selection of goals."

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[28] Ibid.

[29] Stake, R. E. and Denny, T., "Needed Concepts and Techniques for Utilizing more fully the Potential of Evaluation." In the Sixty-eighth Yearbook of the National Society for the Study of Education; Educational Evaluation: New Roles, New Means. Chicago: University of Chicago Press, p. 370.

[30] Scriven, M. S., "The Methodology of Evaluation." In AERA Monograph Series on Curriculum Evaluation: 1. Perspectives on Curriculum Evaluation. Chicago: Rand McNally, 1967, p. 39-83.

Finally, the evaluator is urged to make recommendations.

Tasks related to the interpretation and judgment of outcomes are:

10.1 Reviewing the objectives of the evaluation

10.2 Becoming thoroughly familiar with the transactions of the evaluation; the basic questions asked; the criteria, model, procedure, and techniques employed; and the data collected#

10.3 Verifying the statistical analysis and the procedures used to collect and process the data

10.4 Comparing observed antecedents, transactions and outcomes with intended antecedents, transactions, and outcomes#

10.5 Describing points of congruence and incongruence#

10.6 Making inferences about contingencies among transactions and outcomes

10.7 Interpreting the results of the evaluation program in terms of given criteria*

10.8 Establishing relationships and distinguishing between those outcomes that result from treatment application and those contingent upon antecedent conditions#

10.9 Utilizing, when necessary, the services of evaluation, statistical, and subject area specialists in order to interpret the data

10.10 Determining if any unintended outcomes occurred#

10.11 Identifying the ways in which segments of the educational community, i.e., the institution, its staff, students, and community, etc., were affected by the observed transactions and outcomes

10.12 Comparing generalizations from the literature and theory with those drawn from the evaluation outcomes#

10.13 Reviewing the judgments required of the evaluator

10.14 Obtaining judgments concerning the outcomes of the evaluation from relevant members of the educational milieu

10.15 Judging the "worth" of the outcomes of the evaluation

10.16 Rendering judgments regarding the worth of alternative strategies as employed in the evaluation#

10.17 Rendering judgments as to the significance of the observed transactions for various segments of the educational milieu#

10.18 Judging if the unintentional outcomes are unwanted side effects or incidental gains#

10.19 Rendering judgments regarding the worth and relevance of data-gathering techniques as used in the evaluation#

10.20 Rendering judgments as to the overall quality of the evaluation effort

10.21 Recommending, if appropriate, future modifications for the data-gathering techniques

10.22 Identifying and recommending alternative strategies#

10.23 Identifying and recommending procedures to control or reduce unwanted side effects#

10.24 Identifying and recommending procedures to control or enhance incidental gains

10.25 Providing counsel to relevant members of the educational milieu regarding the interpretations and implications of the judgments rendered#

10.26 Consulting with clients regarding interpretation and judging outcomes

10.27 Obtaining resources and resource personnel to facilitate the interpreting and judging of the outcomes

10.28 Coordinating efforts to interpret and judge outcomes

10.29 Smoothing efforts to interpret and judge outcomes

11. REPORTING OUTCOMES

Reporting evaluation outcomes requires an unusually high degree of technical skill and evaluation "savvy." Stake and Denny[31] emphasize this point:

> "Evaluation reports, unfortunately, usually tell little more than that the work proposed was completed, that the complaints of the staff were justified, and that there were greater differences within groups of students (or schools or curriculums) than there were between the groups. Most evaluation

[31] Stake, R. E. and Denny, T., loc. cit.

> reports give only the participants some notion of what occurred; the outsider gains little insight. Most formal reports avoid explicit subjective judgments by insiders and outsiders as if they were evil.
>
> "Educators and laymen alike cannot non-visualize and explain what is happening in our classrooms. Part of the reason for this failing is our inability to share perceptions and measurements. Part is our lack of motivation to share them. What should be told? What should be shared? Our needs are not only procedural; we need also a commitment to full and accurate reporting."

The reporting function is the fifth part of Stufflebeam's[32] evaluation design. Concerned less with what should be told and shared, Stufflebeam stresses the procedural aspects of reporting:

> "The purpose of this part, the reporting part of a design, is to insure that decision-makers will have timely access to the information they need and that they will receive it in a manner and form which facilitates their use of the information."

One must accept the fact that evaluation report writing is a difficult, often unrewarding job.

Tasks which would be associated with reporting the outcomes of evaluation are:

11.1 Becoming familiar with available means for reporting outcomes

11.2 Researching new methods for reporting outcomes

11.3 Specifying the format for evaluation reports

11.4 Becoming aware of the professional understandings of those who are to receive the evaluation results#

11.5 Scheduling the reporting of outcomes

11.6 Specifying means for reporting the outcomes of the evaluation to relevant audiences*

11.7 Coordinating efforts to prepare a report

11.8 Preparing a report of the evaluation that will be understandable to the public. It will serve and include

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[32]Stufflebeam, D. L., loc. cit.

meaningful terms, tables, charts, graphs, illustrations, and answers to the basic questions of the evaluation#

11.9 Describing the intended antecedents, transactions, and outcomes

11.10 Describing processes and procedures by which evaluative data were gathered and judgments rendered#

11.11 Describing the observed antecedents, transactions, and outcomes

11.12 Describing criteria#

11.13 Describing explicitly unintentional outcomes#

11.14 Detailing rendered judgments

11.15 Reporting the limitations of the evaluation#

11.16 Utilizing, when necessary, the services of reporting specialists in order to report the outcomes

11.17 Obtaining resources and resource personnel to facilitate the reporting of outcomes

11.18 Coordinating efforts to produce a report

11.19 Preparing findings and recommendations to the decision-makers in an understandable manner*#

11.20 Obtaining the decision-makers' reactions to the report

11.21 Providing evaluation abstracts or summaries for presentation to specific groups*

11.22 Packaging the outcomes of the evaluation for purposes of presentation to appropriate publics#

11.23 Obtaining reactions to the presentations

11.24 Consulting with clients regarding the reporting of outcomes

11.25 Smoothing the efforts of others to prepare and produce reports

11.26 Reporting subsequent modifications in transactions and their observed outcomes#

12. INFORMATION PROCESSING AND DISSEMINATION

Earlier, "information processing" was described as the act of processing already-prepared, treated, interpreted, judged, and reported data for purposes of dissemination. Information processing activities include reviewing evaluation literature, collecting evaluation reports, organizing and storing evaluative-based information, packaging evaluative information and disseminating information pertaining to the field of evaluation. "Data banks" also are included in this category.

Oddly, there are no existing agencies, large or small, that have assumed the responsibility for processing and disseminating all forms of evaluative information. Some agencies have assumed the responsibility of processing and disseminating specific types of information. (Of note is the work of Popham and Skager[36].) (Their plans involve collecting, storing, processing, and distributing objectives and evaluation measures.) And other agencies have disseminated general evaluation information for the non-professional evaluator, for example. The combined efforts of the Cooperative Educational Research Laboratory, Inc. (CERLI) and the Center for Instructional Research and Curriculum Evaluation (CIRCE) resulted in the dissemination of an "evaluation kit," containing pertinent evaluation information.[34] Clearly, some super-agency to assume the responsibility of processing and disseminating evaluation-related information should be established.*

Guba[35] has suggested the development of,

> "A National Information Center for Education (NICE), which would have as its purpose organizing, processing, and reporting evaluative information. It would develop and maintain mechanisms that would serve these ends. The agency would maintain records of the goals and organization of Federal and other funding programs in support of education, of the objectives and procedures of program elements within those

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[33]Popham, W. J. and Skager, R. W., "Instructional Objectives Measurement System. Progress in Evaluation Study," Third Annual Report to the U. S. Office of Education, Center for the Study of Evaluation. Los Angeles: Graduate School of Education, University of California, 1968, p. 113-115.

[34]Educational Products Information Exchange Institute, "Evaluation Kit: Tools and Techniques." Educational Products Report, 1969, 2, Information Supplement #5 (whole).

[35]Guba, E. G., "Confronting the Problems of Educational Evaluation: A Call for a Consortium of Relevant Agencies." A paper presented at an Invitational Conference on Educational Evaluation, Washington, D. C., 1967, p. 11, 13.

*Since this was written the Educational Testing Service has entered into the Educational Resources Information Center (ERIC) network and will dispense information related to tests, measurement, and evaluation.

agencies, of the information requirements of major audiences for education, and particularly the scope, sequence, timing, locus, focus, and criticality of decisions requiring evaluative information. NICE would also be responsible for developing operational instruments for such data collection and treatment."

Guba is indeed anticipating a system which will be welcomed by all educators and especially by evaluators. However, until such an agency is developed, groups of evaluators must take on some of the activities described below.

Tasks which seem to be associated with this category are:

12.1 Providing specifications for the coding and cataloguing of evaluative information and processed data

12.2 Training personnel in information processing and dissemination

12.3 Detailing the scope of information processing and dissemination activities performed by the given agency

12.4 Identifying potential sources of evaluative information and processed data

12.5 Requesting evaluation information and processed data from likely sources

12.6 Collecting evaluative information and processed data

12.7 Visiting pertinent persons and places to acquire updated evaluation information

12.8 Utilizing, if necessary, the services of surveillance and subject area specialists

12.9 Conducting conferences regarding specific evaluation-related issues of current importance

12.10 Requesting select members of the EM to prepare reviews of specific evaluation areas

12.11 Coding and cataloguing evaluation information and processed data

12.12 Utilizing the services of information processing specialists

12.13 Transferring evaluation information into information storage systems

12.14 Providing for information storage, management, and retrieval

12.15 Implementing and maintaining a data bank*#

12.16 Becoming familiar with available information media methods for reporting information

12.17 Developing, if necessary, new reporting styles

12.18 Specifying the format for reporting evaluation information

12.19 Scheduling the reporting of evaluation information

12.20 Reporting evaluation information in a highly communicable fashion

12.21 Providing evaluation abstracts or summaries

12.22 Utilizing, if necessary, the services of reporting specialists

12.23 Identifying potential recipients of evaluative information and processed data

12.24 Informing relevant members of the educational milieu regarding the types of evaluation information which may be requested

12.25 Communicating to potential users regarding the availability and use of the data bank#

12.26 Packaging the information for purposes of presentation to appropriate publics#

12.27 Disseminating evaluative information and processed data

12.28 Consulting with clients regarding the retrieval of evaluative information and processed data

12.29 Coordinating evaluation information processing and dissemination activities

12.30 Coordinating data bank activities

12.31 Smoothing the efforts of others to acquire specific evaluation information and processed data

12.32 Obtaining resources and resource personnel to process and disseminate evaluation information and processed data

12.33 Obtaining reactions from relevant members of the educational milieu regarding the reporting of evaluation information

12.34 Surveying select members of the educational milieu regarding their evaluation information needs

12.35 Determining future evaluation information needs

13. DECISION MAKING: THE UTILIZATION OF INFORMATION

The evaluation process has now run its full cycle. We began this process by modifying attitudes, that is, by attempting to instill within the educational community a demand to engage in formal evaluation projects. Then we trained educators to become sensitive to decision stimuli so that they might later identify decision situations. Following this, evaluation strategies were selected and evaluation and managerial plans were developed. After the plans had been completed, they underwent a final assessment and were modified if deemed necessary. Data-gathering techniques were selected or developed and data was collected. Finally, the raw data was systematically prepared, treated, interpreted, judged, reported, and disseminated.

Now a decision-maker has information, and for all intents and purposes the evaluation will be terminated. The "feedback" of information to a decision-maker--the goal of an evaluation effort--has been accomplished. But, the ways in which the decision-makers employ the information they receive is as crucial to the evaluation process as any of the preceding steps. If decision-makers do not use formally gathered information (even to the extent of informing themselves about "what" is happening), then the raison d'etre for evaluation efforts has vanished. An evaluation effort makes no sense if its product--information--is not utilized.

In this respect, Wilhelms[36] suggests that:

> "Regardless of whether the evaluation is formal or informal--and equally regardless of whether it is 'good' or 'sensitive' or 'adequate'--it has one thing in common with every other system of feedback: When it has blended into the background system of purposes and values and policies, it controls the next step. This is simply a fact of life; all our decisions are conditional by perceptions of how we are doing in terms of what we hope to do."

That "next step" can be excruciatingly painful especially if the decision-maker is unfamiliar with decision-making strategies. This is a likely occurrence according to Guba[37], who claims that:

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[36]Wilhelms, F. T., "Evaluation as Feedback." In Wilhelms, F. T. (Ed) Evaluation as Feedback and Guide. Washington, D. C.: Association for Supervision and Curriculum Development, NEA, 1967, p. 3.

[37]Guba, E. G., "The Failure of Educational Evaluation," p. 35.

"At present, no adequate knowledge of decision processes and associated information requirements relative to educational programs exist. Nor is there any ongoing program to provide this knowledge."

Not too long ago, Scriven[38] advised the evaluator to assume the responsibility for developing objectives. Similar advice would not be inappropriate now. Evaluators should, in all due haste, seek ways to develop programs designed to better understand the decision processes. This is a must! If the decision-maker for any reason cannot utilize evaluative information, he will not be inclined to engage in or support future evaluations. It would be most tragic if efforts expended to create a supportive climate for evaluation come to naught.

Tasks relative to the decision-making process are:

13.1 Becoming familiar with the contents of an evaluation report

13.2 Assessing the perspicacity of the evaluation report

13.3 Using effectively select members of the educational milieu: to assess the perspicacity of the evaluation report

13.4 Determining the nature of the institutions involved in the decision solution#

13.5 Reviewing the major level(s) of decision-making to be served*

13.6 Reviewing the decision-making process as it operates in a given setting*#

13.7 Developing taxonomies of educational decisions

13.8 Identifying decision-making criteria

13.9 Selecting decision-making criteria

13.10 Identifying decision-making models

13.11 Developing, if necessary, a decision-making model

13.12 Selecting a decision-making model

13.13 Identifying and proposing alternative decision solutions

13.14 Assessing the decision solution for its relevance, legality, congruence, relatedness, compatability, impact, practicality, and relative desirability

[38]Scriven, M. W., loc. cit.

13.15 Utilizing effectively select members of the educational milieu to assess the proposed decision solution

13.16 Selecting desirable and feasible decision solutions

13.17 Reinforcing those individuals who produce "rational" decision solutions

13.18 Reinforcing those individuals who produce "creative and feasible" decision solutions

13.19 Training select members of the educational milieu in decision-making strategies

13.20 Inviting and encouraging select members of the educational milieu to participate actively in decision-making processes

13.21 Coordinating the decision-making process

13.22 Providing directives, guidelines, and/or other needed assistance to decision-makers for purposes of improving the usefulness of transmitted data in the decision-making process#

13.23 Smoothing the efforts of decision-makers to derive and select decision solutions

13.24 Obtaining reactions to the decision solutions from relevant members of the educational milieu

13.25 Assisting the decision-maker in formulating new questions for future evaluation based upon the original evaluation findings#*

13.26 Using evaluation findings as the basis for discussion in teacher in-service training sessions*

13.27 Conducting sensitivity sessions to induce selected members of the educational milieu to make use of the evaluative information in decision solutions

13.28 Suggesting to decision-makers techniques by which they themselves can evaluate and modify behavior*

14. PERFORMING ACTIVITIES AND RESEARCH RELATED TO EVALUATION AND TO THE DEVELOPMENT, DIFFUSION, AND ADOPTION OF EVALUATION

Research specifically related to evaluation is vital to the success of evaluation as a discipline. It is imperative that new evaluation techniques and strategies be developed. Referring to this latter point, Guba[39] indicates that:

> "These facts lead me to the conclusion that some new evaluation strategy free of these [see below] defects is required before evaluation as a science can make its next major strides. Until we have developed a theory which permits evaluation to occur continuously (and to provide continuous feedback of relevant data), to be free of the constraints imposed by conventional experimental design theory, to be open to alterations and refinements in the treatment during the evaluation period, and to yield results valid in the septic world of the classroom as well as in the antiseptic world of the laboratory, we will make little progress."

More research is needed to determine how well our available strategies and techniques fare under close scrutiny. Evaluation-related variables of all kinds must be examined and normative information--standards--must be collected and processed. But, if evaluation as a discipline is ever to be adopted by the school community, more activity and additional research related to development, diffusion, and adoption activities (as described by Clark and Guba[40] and as amplified by Stufflebeam and Westerlund[41]) must be performed. If neoteric evaluation strategies can be classified as innovations, they become subject to the procedures related to and necessary for change in education.

Tasks related to the performance of research related to evaluation and activities related to the development, diffusion and adoption of evaluation are:

14.1 Defining explicitly the meanings of evaluation-based terms

14.2 Developing and testing evaluation models*

14.3 Performing research related to new methodological techniques*

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[39] Guba, E. G., "Confronting the Problems of Educational Evaluation: A Call for a Consortium of Relevant Agencies," p. 5.

[40] Clark, D. L. and Guba, E. G., "An Examination of Potential Change Roles in Education." A paper read at a Seminar of Innovation in Planning School Curricula, October 1965.

[41] Stufflebeam, D. L. and Westerlund, S. R., "The Evaluation of Context, Input, Process and Product in Elementary and Secondary Education." U. S. Office of Education, Bureau of Elementary and Secondary Education, February 1967.

14.4 Drafting plans for constructing idealized evaluation strategies and techniques for usage in select settings of the educational milieu

14.5 Constructing idealized evaluation strategies and techniques for usage in select settings of the educational milieu

14.6 Integrating the components of the strategies and techniques into operating systems for usage in select settings of the educational milieu

14.7 Developing procedures for creating widespread awareness of the neoteric evaluation strategies and techniques

14.8 Developing situations by which individuals can examine and assess operating qualities of the neoteric evaluation strategies and techniques

14.9 Researching procedures for the training of local personnel to manage, operate, service, and utilize neoteric evaluation strategies and techniques

14.10 Developing situations for the trial use of the evaluation strategies and techniques

14.11 Modifying the neoteric evaluation strategies and techniques to fit the particular circumstances of the adopting institution

14.12 Performing studies to assure the assimilation of the evaluation strategies and techniques by the adopting institution

14.13 Conducting longitudinal studies to determine effects of specific variables over time*

14.14 Performing experimental research on some of the substantive areas being evaluated*

14.15 Collecting standards of all kinds

14.16 Developing a taxonomy for standards

14.17 Performing case studies or other type of research to learn more about the nature of children involved in programs being evaluated#

14.18 Conducting simulation studies and predictive studies*

14.19 Conducting surveys related to educational needs, and uses and abuses of evaluation

14.20 Determining the applicability of various data-gathering techniques for special populations

14.21 Comparing alternative strategies and techniques for instilling in select members of the educational milieu an awareness of a need for evaluation

14.22 Comparing alternative strategies for instilling in select members of the educational milieu a demand for evaluation

14.23 Determing attitudes toward evaluation and readiness for change

14.24 Coordinating research and activities relating to the development, diffusion and adoption of evaluation

14.25 Coordinating evaluation based research in general

14.26 Smoothing general research activities and activities related to development, diffusion and adoption of evaluation

15. ADMINISTERING AND COORDINATING ACTIVITIES IN AN EVALUATION FACILITATION AND COORDINATION SYSTEM

All organizational entities require some personnel to direct and supervise the activities of the staff. Though not always directly pertinent to the evaluation process, these are vital functions. In the real world the evaluation probably would not be initiated without the aid of the administrative staff.

Activities to be included within the framework of administration-type tasks are:

15.1 Stating explicitly the broad purposes of an evaluation and/or facilitation entity#

15.2 Developing specific policies and general guidelines for the operation of an evaluation and/or facilitation entity

15.3 Identifying and assessing alternative objectives as possible goals for an evaluation and/or facilitation entity#

15.4 Defining criteria for selecting objectives for an evaluation and/or facilitation entity#

15.5 Selecting and assigning priorities to objectives for an evaluation and/or facilitation entity#

15.6 Stimulating and assisting in periodic evaluation, reflection, and revision of purposes and/or objectives#

15.7 Defining staff and resource requirements for operating an evaluation and/or facilitation entity*

15.8 Developing plans to meet staff and resource requirements*

15.9 Developing job descriptions

15.10 Constructing, securing, and managing budgets*

15.11 Developing policies and procedures for the selection, assignment, retention, dismissal, promotion, and in-service growth of personnel#

15.12 Establishing criteria for evaluating the on-the-job performance of personnel

15.13 Developing policies and techniques for evaluating on-the-job performance of personnel#

15.14 Reviewing all evaluation designs, instruments, and reports before they are used or released for distribution*

15.15 Identifying sources, i.e., foundations or agencies, which have indicated an interest in supporting programs or projects similar in kind to the submitting evaluation and/or facilitation entity#

15.16 Making an informal contact with the agency to which the proposal will be submitted#

15.17 Developing an overall managerial plan for an evaluation and/or facilitation entity

15.18 Supervising the training, research, facilitation and coordination services performed by staff members*

15.19 Arranging for in-service training of the staff*

15.20 Organizing the tasks within the entity in order to utilize the unique talents of each member*

15.21 Maintaining conditions conducive to high morale and job efficiency

15.22 Arranging for an independent evaluation of the activities of an evaluation and/or facilitation entity*

15.23 Coordinating evaluation, facilitation and/or coordinating activities within the evaluating group

15.24 Coordinating evaluation, facilitation and/or coordinating activities within the school

15.25 Coordinating evaluation, facilitation and/or coordinating activities within the district

15.26 Coordinating evaluation, facilitation and/or coordinating activities between districts

15.27 Coordinating evaluation, facilitation and/or coordinating activities within a cooperative multi-district unit

15.28 Coordinating evaluation, facilitation and/or coordinating activities between cooperative multi-district units

15.29 Coordinating evaluation, facilitation and/or coordinating activities within the state

15.30 Smoothing the administrating and coordinating efforts of others

16. PROVIDING FACILITATION AND COORDINATION SERVICES

It would seem logical to consider evaluation a "service-oriented" profession not unlike that of law and medicine whose practitioners provide information and formulate decisions for their clients. In one respect, however, evaluation differs: the professional evaluator's clientele consists of "amateur" evaluators who know all about or at least express opinions about educational practices, institutions, problems, etc.

Nevertheless, in this age of specialization, some select evaluators should function as facilitators of the decision-making process. Professional (highly qualified) evaluators not only should "evaluate" but they should facilitate and coordinate evaluation efforts that dynamize the decision-making process.

An Educational Evaluation Facilitation and Coordination System would provide facilitative services for evaluation and decision-making efforts. To accomplish its mission, the system would be designed to increase the quality and usage of evaluation strategies and techniques in educational systems by providing services to professional, para-professional, temporary and non-professional evaluators.

Tasks associated with these services include:

16.1 Surveying the training needs of select members of the educational milieu#

16.2 Developing instructional objectives, plans, aids, and materials for training#

16.3 Training select members of the educational milieu in tasks associated with their roles

16.4 Training select members of the educational milieu in tasks related to evaluation facilitation and/or coordination

16.5 Obtaining from select members of the educational milieu reactions to training

16.6 Surveying the service needs of select members of the educational milieu

16.7 Facilitating, generally, the efforts of select members of the educational milieu to undertake evaluations

16.8 Assisting select members of the educational milieu to develop objectives#

16.9 Reducing impediments to evaluations

16.10 Developing systems of support and reinforcement to those individuals undertaking evaluative efforts

16.11 Obtaining from select members of the educational milieu reactions to facilitative efforts

16.12 Facilitating, generally, the efforts of select members of the educational milieu to develop solutions for operating problems

16.13 Obtaining resources and resource personnel for the facilitation of evaluation efforts, the coordination of evaluation efforts and for decision-making efforts